

Notice of Allowability

Application No.

09/584,259

Examiner

Michael Y. Won

Applicant(s)

NOVAES ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Appeal Brief filed July 13, 2007 and Interview conducted on August 28, 2007.
2. ☒ The allowed claim(s) is/are 50-53, 56, 57, 59, 61-63, 66-69, 72, 73-74, 76-81, 84-86, and 88-90 (renumbered 1-29).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

2. Authorization for this examiner's amendment was given in a telephone interview with Kevin P. Radigan (Reg. No.: 31,789) on August 28, 2007.

3. The application has been amended as follows:

50. **(Currently Amended)** A method of managing processing groups of a shared nothing distributed computing environment, said method comprising: requesting via a request by a prospective member to join a processing group of a shared nothing distributed computing environment, said request including a sequence number indicating a version of the processing group, wherein the shared nothing distributed computing environment is an environment with a particular system architecture wherein only one processing node is connected to a given disk;

determining whether the prospective member can join the processing group, said determining employing the sequence number, wherein the determining comprises comparing by said prospective member the sequence

number in the request with a current group sequence number to determine if the join of the prospective member to the processing group should continue;

joining the processing group by the prospective member, in response at least in part to the determining indicating that the prospective member can join the processing group; and

wherein the joining comprises automatically reinitializing state of the prospective member responsive to the comparing indicating that the sequence number in the request is less than the current group sequence number, the reinitializing making a state of the prospective member consistent with a state of an existing member of the processing group, and thereafter, proceeding with the joining by the prospective member.

59. **(Currently Amended)** A method of managing processing groups of a shared nothing distributed computing environment, said method comprising:

joining a prospective member to an inactive processing group of a shared nothing distributed computing environment, wherein the shared nothing distributed computing environment is an environment with a particular system architecture wherein only one processing node is connected to a given disk;

comparing a sequence number of the processing group with a sequence number of the prospective member;

updating the sequence number of the processing group, in response to the comparing indicating a particular difference;

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determining whether a quorum of members has joined the processing group;

setting the sequence number of the processing group, in response to the determining indicating a quorum of members has joined the processing group;

initiating activation of the processing group, in response to the setting; and

wherein the initiating activation comprises:

obtaining by a member of the processing group having a sequence number lower than the sequence number of the processing group a copy of group state associated with the sequence number of the processing group; and

reinitializing the member using the copy of group state.

66. **(Currently Amended)** A system of managing processing groups of a shared nothing distributed computing environment, said system comprising:

a request by a prospective member to join a processing group of a shared nothing distributed computing environment, said request including a sequence number indicating a version of the processing group, wherein the shared nothing distributed computing environment is an environment with a particular system architecture wherein only one processing node is connected to a given disk;

means for determining whether the prospective member can join the processing group, said means for determining employing the sequence number, wherein the means for determining comprises means for comparing by said prospective member the sequence number in the request with a current group

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sequence number to determine if the join of the prospective member to the processing group should continue;

means for joining the processing group by the prospective member, in response at least in part to the determining indicating that the prospective member can join the processing group; and

wherein the means for joining comprises means for automatically reinitializing state of the prospective member responsive to the means for comparing indicating that the sequence number in the request is less than the current group sequence number, the reinitializing making a state of the prospective member consistent with a state of an existing member of the processing group, and thereafter, proceeding with the joining by the prospective member.

74. **(Currently Amended)** A system of managing processing groups of a shared nothing distributed computing environment, said system comprising:

means for joining a prospective member to an inactive processing group of a shared nothing distributed computing environment, wherein the shared nothing distributed computing environment is an environment with a particular system architecture wherein only one processing node is connected to a given disk;

means for comparing a sequence number of the processing group with a sequence number of the prospective member;

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means for updating the sequence number of the processing group, in response to the comparing indicating a particular difference;

means for determining whether a quorum of members has joined the processing group;

means for setting the sequence number of the processing group, in response to the determining indicating a quorum of members has joined the processing group;

means for initiating activation of the processing group, in response to the setting; and

wherein the means for initiating activation comprises:

means for obtaining by a member of the processing group having a sequence number lower than the sequence number of the processing group a copy of group state associated with the sequence number of the processing group; and

means for reinitializing the member using the copy of group state.

78. **(Currently Amended)** An article of manufacture comprising:

at least one computer usable storage medium having computer readable program code logic stored thereon to manage processing groups of a shared nothing distributed computer environment, the computer readable program code logic comprising:

a request by a prospective member to join a processing group of a shared nothing distributed computing environment, said request including a sequence

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number indicating a version of the processing group, wherein the shared nothing distributed computing environment is an environment with a particular system architecture wherein only one processing node is connected to a given disk;

determine logic to determine whether the prospective member can join the processing group, said determining employing the sequence number, wherein the determining comprises comparing by said prospective member the sequence number in the request with a current group sequence number to determine if the join of the prospective member to the processing group should continue;

join logic to join the processing group by the prospective member, in response at least in part to the determining indicating that the prospective member can join the processing group; and

wherein the join logic comprises automatically reinitialize logic to automatically reinitialize state of the prospective member responsive to the comparing indicating that the sequence number in the request is less than the current group sequence number, the automatic reinitialize logic making a state of the prospective member consistent with a state of an existing member of the processing group, and thereafter, proceeding with the joining by the prospective member.

86. **(Currently Amended)** An article of manufacture comprising:

at least one computer usable storage medium having computer readable program code logic stored thereon to manage processing groups of a shared

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nothing distributed computer environment, the computer readable program code logic comprising:

join logic to join a prospective member to an inactive processing group of a shared nothing distributed computing environment, wherein the shared nothing distributed computing environment is an environment with a particular system architecture wherein only one processing node is connected to a given disk;

compare logic to compare a sequence number of the processing group with a sequence number of the prospective member;

update logic to update the sequence number of the processing group, in response to the comparing indicating a particular difference;

determine logic to determine whether a quorum of members has joined the processing group;

set logic to set the sequence number of the processing group, in response to the determining indicating a quorum of members has joined the processing group;

initiate logic to initiate activation of the processing group, in response to the setting; and

wherein the initiate logic comprises:

obtain logic to obtain by a member of the processing group having a sequence number lower than the sequence number of the processing group a copy of group state associated with the sequence number of the processing group; and

reinitialize logic to reinitialize the member using the copy of group state.

Allowable Subject Matter

4. Claims 50-53, 56, 57, 59, 61-63, 66-69, 72-74, 76-81, 24-86, and 88-90 are allowable over prior art of record in light of the arguments presented in the Appeal Brief filed July 13, 2007 and the Examiner's Amendment above.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Y. Won whose telephone number is 571-272-3993. The examiner can normally be reached on M-Th: 7AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on 571-272-4006. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael Won/

Primary Examiner

August 29, 2007